

REMARKS

Claims 1-10 are all the claims currently pending in the application. Claims 1-9 stand rejected. By this Amendment, Applicant adds claim 10.

Applicant thanks the Examiner for acknowledging the claim for foreign priority and for indicating that certified copies of the priority document have been received. Applicant also thanks the Examiner for considering and initialing the Information Disclosure Statements filed on July 31, 2006 and March 11, 2008.

Claim Rejections - 35 U.S.C. § 112

Claims 1-9 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite. Specifically, the Examiner states, “The track roller is not positively recited” in claim 1. Although Applicant disagrees with this rejection, by this Amendment, Applicant amends claim 1 in order to clarify the structure. Applicant believes this amendment clearly defines the tracker roller and its structural relationship within the coreless rubber crawler traveling device.

Claim Rejections - 35 U.S.C. § 103

Claims 1, 2, 7, and 9

Claims 1, 2, 7, and 9 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Inaoka et al. (U.S. Patent 6,890,042). Applicant respectfully traverses this rejection for at least the following reasons.

Claim 1 recites a “coreless rubber crawler traveling device...wherein a contact area of the endless inner periphery rolling contact surface with the outer surface of the tracker roller in a

fixed widthwise region is in the range of 30% to 70% with respect to the area of the outer surface of the tracker roller.” Inaoka fails to disclose or fairly suggest at least the range of contact area required by claim 1.

Regarding Inaoka, the Examiner admits, “The amount of contact [between a wheel and a crawler belt] appears to [be] about 80%, but the exact amount is not disclosed.” Office Action, page 3. To support this estimate of contact area, the Examiner cites to Figure 6. However, in discussing Figure 6 in the specification, Inaoka makes no disclosure or suggestion about the range of contact between a wheel and a crawler belt. See col. 6, lines 7-44.

Inaoka discloses a height of a chamfered portion of the wheel which should be shorter than the height of a corresponding face of the crawler belt. Col. 6, lines 23-30. However, the relationship described in Inaoka could be satisfied using virtually any range of contact area. There is no disclosure or suggestion of any appropriate range of contact area. Because Inaoka is totally lacking in disclosure of a range or suggestion that some range would be desirable, it is not fair to say that the presently claimed range would be obvious to one of ordinary skill in the art based on an optimization argument.

No range of contact area is disclosed or suggested by Inaoka. Therefore, it would not have been obvious to one of ordinary skill in the art that such a range required optimization. The mere fact that a reference can be modified does not make the resultant modification obvious unless the prior art also suggests the desirability of the modifications. See *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Even if the contact area shown in Inaoka could be

modified to be within the claimed range of contact area, there is no suggestion in the reference that such a modification would be desirable.

Although the Examiner assumes that the contact area shown in Inaoka is roughly 80%, there is no disclosure or suggestion to this effect. Drawings cannot be relied upon for specific dimensions without some indication in the figures or the specification regarding the scale of the drawings. See MPEP § 2125 (quoting *Hockerson-Halberstadt, Inc. v. Avia Group Int'l*, 222 F.3d 951, 956 (Fed. Cir. 2000) (“[I]t is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue”)). Inaoka is completely silent on the contact area between the wheel and the crawler, and therefore the Examiner improperly relied on an his visual estimate of the contact area.

Moreover, the recited range of 30% to 70% provides unexpected results. If the contact area between the roller and the rolling contact surface is too small, the surface pressure is too high - resulting in reduced durability. Page 3, paragraph [0008]. In contrast, if the contact area is too large, the spring elasticity is not sufficient. Page 8, paragraph [0020]. In the claimed device, the rubber acts as a damper to decrease the shocks received through the device. In the claimed range of rolling contact surface area, the rubber is allowed to flex in order to improve the performance of the rubber as a shock absorber. Furthermore, the pressure per unit area is increased by having a range of contact area as claimed, which causes the rubber to further deflect and increases the damping effect. These results are not disclosed in the cited art of record and would not have been obvious to one of ordinary skill in the art when the invention was made.

Generally, in a construction vehicle equipped with a crawler, there is insufficient damping of the impact received from the ground, and the full force of the impact is transmitted to the vehicle. Under such circumstances, an occupant of the vehicle may feel severe vibrations, resulting in an uncomfortable experience for the occupant.

The device of claim 1 provides improved ride comfort by realizing a damper using flexure of the rubber. Increasing the pressure applied to the rubber causes the rubber to flex, which improves the crawler's shock absorbing performance.

Inaoka fails to disclose or suggest at least the claimed range of contact area. As such, Applicant respectfully believes that claim 1, as written, is allowable over Inaoka. Claims 2, 7 and 9 depend from claim 1 and are allowable at least by virtue of their dependency.

Claims 3-6 and 8

Claims 3-6 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Inaoka et al. as applied to claim 1 above, and further in view of Watanabe et al. (U.S. Patent 6,471,307).

Claims 3-6 and 8 depend from claim 1 and are allowable at least by virtue of their dependency. Applicant has shown above that Inaoka fails to disclose or suggest all features of claim 1. Moreover, Watanabe, which the Examiner relies on to allegedly show a stepped up portion on the inner surface of a crawler belt, does not cure the deficient disclosure of Inaoka with respect to the range of contact area and the unexpected results caused by this range. In fact, Watanabe does not disclose or suggest any appropriate or desirable range of contact area.

New Claim

Applicant adds new dependent claim 10, which is directed to the exemplary embodiment shown in Fig. 4. Claim 1 is patentable at least because of its dependency from claim 1.

Specifically, in the conventional configuration of Fig. 7, the outer surface of the tracker roller comes into contact with an inner periphery rolling contact surface of a rubber elastic body. The pressure received by the inner periphery rolling contact surface of the rubber elastic body is evenly dispersed thereon, and a damping effect cannot be expected. However, as indicated in Fig. 4, the pressure is received on a part of the inner periphery rolling contact surface of a rubber elastic body. The pressure receiving area is reduced and the pressure per unit area is increased, and the crawler is deflected due to the flexure of the stepped portion. Thus, a sufficient damping effect is caused in the crawler and the impact to the occupant is absorbed by this effect.

Further, because the above-described features are applied to a coreless rubber crawler traveling device, the technical advantages derived from the configuration described above are further enhanced. In a crawler with a core embedded therein, the cores would normally be positioned at main codes (steel codes) 13 in Fig. 4. The pressure received by the stepped portion is further received by the rubber between the stepped portion and the core. Therefore, there is insufficient damping because the amount of the rubber between the core and the stepped portion is not enough to achieve the desired amount of flexure.

In the coreless rubber crawler as in the present invention, the pressure from the tracker roller exceeds the main codes 13, while somewhat widening the rubber, and reaches the outer surface of the rubber rug 15. Therefore, the pressure received is absorbed by a sufficient amount

of rubber. Thus, the effect that is absent in a crawler with a core can be obtained in the coreless rubber crawler of the present

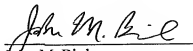
In contrast, neither Inaoka nor Watanabe discloses the device of claim 10, in which outer sides of the outer surface of the tracker roller extend over the lower stage surfaces. Instead, Watanabe merely discloses at Fig. 1 that the outer surface of the tracker roller 16 extend over upper stage surfaces.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880 via EFS payment screen. Please also credit any overpayments to said Deposit Account.

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